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Two new species of *Septobasidium* (*Septobasidiaceae*) from China

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Abstract — Two new species, *Septobasidium ardisiae* on *Ardisia* sp. associated with *Pseudaulacaspis* sp. and *Septobasidium pruni* on *Prunus salicina* associated with *Pseudaulacaspis* sp., are described. They were collected from Yunnan Province, China.

Key words — *Pucciniomycetes*, *Septobasidiales,* taxonomy

Previously, 15 species of *Septobasidium* have been reported in China (Sawada 1931, 1933, Couch 1938, Teng 1963, Tai 1979, Kirschner & Chen 2007, Lu & Guo 2009).

During our recent survey of fungal flora in China, two new *Septobasidium* species were found in Yunnan Province, bringing the total *Septobasidium* species recorded for China to 17.

The first undescribed *Septobasidium* species on *Ardisia* sp., associated with a scale insect, *Pseudaulacaspis* sp. (*Diaspididae*), was discovered from Gaoligong Mountains in September 2008. The Gaoligong Mountains lie along the border between southwestern China and Northern Burma. Special ecological and micro-environmental diversity have resulted in an exceptionally rich flora characterized by high species endemism; during the past year the senior author and her colleagues have collected many *Septobasidium* specimens from this area, which has been identified as a global biodiversity "hot spot."

Septobasidium ardisiae C.X. Lu & L. Guo, **sp. nov.** Figs. 1, 3–5

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Basidioma resupinatum, perenne, 5–10 × 2.5–5 cm, cinnamomeo-brunneum vel brunneum, margine determinatum; superficie laeve, maturitate rimosum separabileque,

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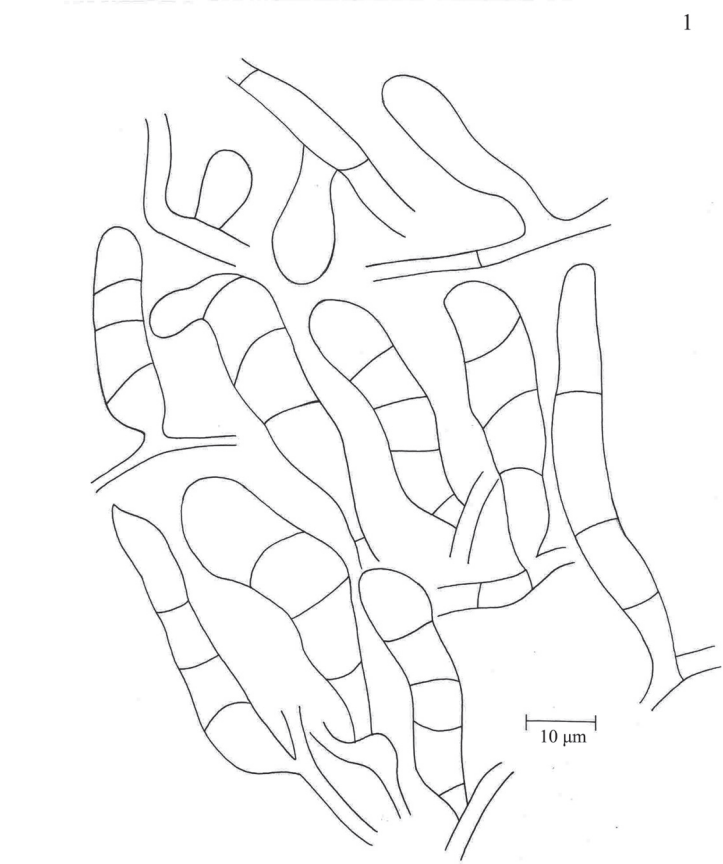

Fig. 1. Basidia of *Septobasidium ardisiae* (HMAS 196432, holotype).

in sectione 630–1150 μm μm crassum, e partibus tribus compositum: 1) subiculum 50–75 μm crassum; 2) pars columnae usque ad 100–245 μm longa; 3) hymenium 215–390 μm crassum, unistratosum vel 2–3-stratosum; basidia cyclindrica, recta vel leviter curvata, 4-cellularia, 42–60 × 10–12.5 μm, hyalina vel flavido-brunneola.

Type: On *Ardisia* sp. (*Myrsinaceae*): China, Yunnan, Gaoligong Mountains, Longling, alt. 1100 m, 6.IX.2008, S.H. He, Y.F. Zhu & L. Guo 2381, HMAS 196432 (**holotype**), associated with *Pseudaulacaspis* sp. (*Diaspididae*).

Basidioma on branches, resupinate, perennial, 5–10 × 2.5–5 cm, cinnamon brown or brown; margin determinate; surface smooth, becoming cracked. In section 630–1150 μm thick, composed of three layers: (1) a subiculum, 50–75 μm thick, (2) a region of pillars; pillars 100–245 μm long, 50–150 μm thick,

branched outwards at the top; hyphae of pillars 3–5 μm thick, (3) hymenial layer 215–390 μm thick, single or 2–3-stratose, stratified by the formation of a new hymenium layer over the older one, with closely packed parallel upright threads. Basidia at first pyriform or subglobose, arising directly from the hyphae without a probasidial cell; cylindrical, straight or slightly curved, 4-celled, 42–60 × 10–12.5 μm, hyaline or pale yellowish brown. Haustoria consisting of both irregularly coiled hyphae and spherical cells. Basidiospores not seen.

Remarks: *Septobasidium ardisiae* is similar to *S. henningsii* Pat. but differs in producing a thinner section (630–1150 μm), shorter pillars (100–245 μm), and a surface soon cracked by 5–10 mm wide fissures. In *S. henningsii* the sections are 1–2 mm thick, the pillars are 300–1100 μm high, and the surface is cracked with smaller (0.1–0.8 mm wide) fissures. In addition, the new species has haustoria in the form of both irregular coiled hyphae and spherical cells, whereas *S. henningsii* has only irregular coiled hyphae.

Couch (1938) regarded *Septobasidium henningsii* as close to *S. albidum* Pat. and *S. flavobrunneum* Boedijn & B.A. Steinm. The new species differs from *S. albidum* and *S. flavobrunneum* mainly in producing stratified hymenia and thicker basidiomata. *Septobasidium albidum* and *S. flavobrunneum* have a single hymenium and thinner sections, measuring 270–370 μm and 270–750 μm respectively.

The second undescribed *Septobasidium* species on *Prunus salicina,* also associated with a scale insect (*Pseudaulacaspis* sp.) is described below.

Septobasidium pruni C.X. Lu & L. Guo, **sp. nov.** Figs. 2, 6–8

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Basidioma resupinatum, 5–10 × 1–2 cm, fumoso-brunneum vel dilutum cinnamomeo-brunneum, margine determinatum; superficie laeve, in sectione 170–330 μm crassum, e partibus tribus indistincte compositum: 1) subiculum 12–22 μm crassum; 2) pars columnae usque ad 50–110 longa, 40–140 μm crassa vel hyphis laxe completa, hyphae partis columnae 3–5 μm crassum; 3) atypicum hymenium 170–200 μm crassum; sine probasidio, basidia cyclindrica, recta vel leviter curvata, 4-cellularia, 17–32 ×5–7.5 μm, hyalina vel brunnea.

Type: On *Prunus salicina* Lindl. (*Rosaceae*): China, Yunnan, Kunming, alt. 1920 m, IX.1982, Z.Y. Zhang & Y.X. Wang, HMAS 91283 (**holotype**), associated with *Pseudaulacaspis* sp. (*Diaspididae*).

Basidioma on branches, resupinate, 5–10 × 1–2 cm, smoke brown or pale cinnamon brown; margin determinate; surface smooth. In section 170–330 μm thick. Indistinctly divided into three regions: (1) a subiculum, 12–22 μm thick, (2) pillars 50–110 μm long, 40–140 μm thick or loosely filled with hyphae; hyphae of pillars 3–5 μm thick, (3) atypical hymenium layer 170–200 μm thick. Basidia arising directly from the hyphae without a probasidial cell; cylindrical,

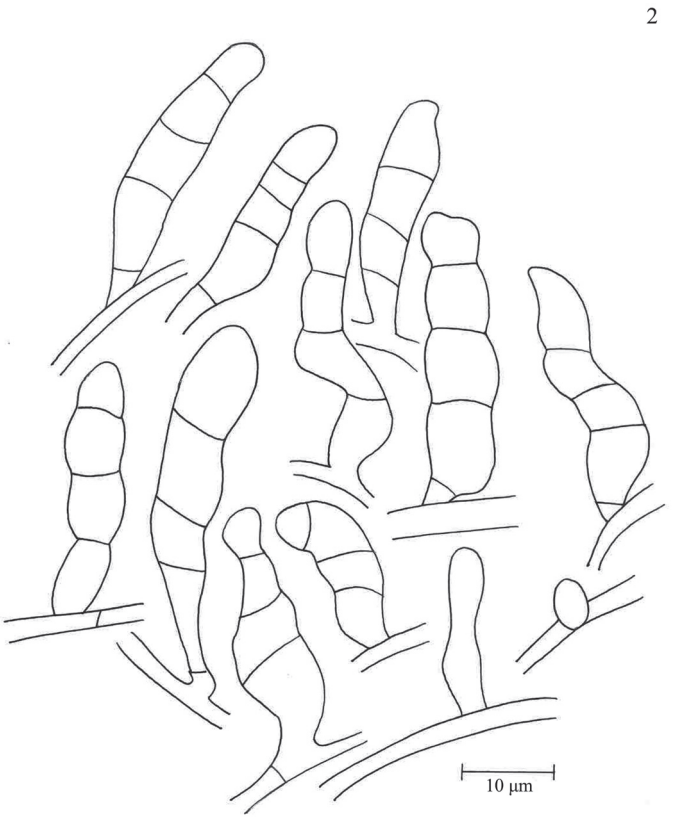

Fig. 2. Basidia of *Septobasidium pruni* (HMAS 91283, holotype).

straight or slightly curved, 4-celled, 17–32 × 5–7.5 μm, hyaline or brown. Haustoria consisting of irregularly coiled hyphae. Basidiospores not seen.

Remarks: *Septobasidium pruni* is similar to *S. cirratum* Burt. but differs distinctly in having a thinner (170–330 μm) section, smaller (17–32 × 5–7.5 μm) basidia, and lacking a probasidial cell. *Septobasidium cirratum* has sections that are 1–1.5 mm thick and basidia measuring 40–45 × 8–8.6 μm, and with a probasidial cell.

Figs. 3–5 (right). *Septobasidium ardisiae* (HMAS 196432, holotype). 3. Basidiomata on branches. 4. Section of basidioma. 5. Basidia. Figs. 6–8. *Septobasidium pruni* (HMAS 91283, holotype). 6. Basidiomata on branches. 7. Section of basidioma. 8. A basidium (arrow).

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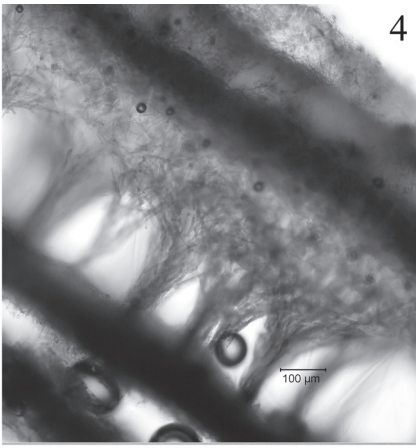
4
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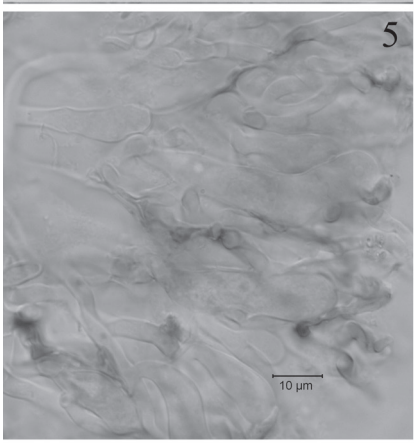
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6
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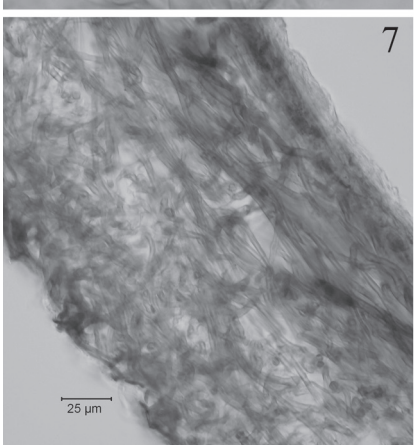
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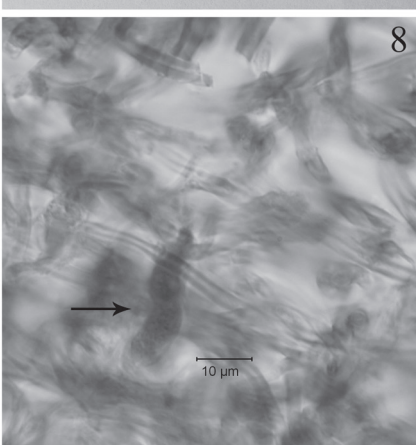
8
10 µm

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